This listing of claims replaces all prior versions and listings of claims in the application:

**Listing of Claims:**

Claims 1-26 (Canceled).

Claim 27. (currently amended) A method of manufacturing an implantable endoluminal device capable of radially expanding from a first diameter to a second diameter comprising the steps of:

a. vacuum depositing a device-forming metal onto an unpatterned, exterior surface of a generally cylindrical substrate at a deposition rate that controls a formation of heterogeneities in the metal to form a generally tubular, unpatterned, substantially homogeneous metal film on the exterior surface of the substrate;
b. forming a pattern of openings through the deposited generally tubular, unpatterned, substantially homogeneous metal film to form the implantable endoluminal device, whereby the pattern of openings provide a plurality of geometric deformation regions that permit radial expansion of the implantable endoluminal device; and
c. removing the implantable endoluminal device from the substrate.

Claim 28. (previously presented) The method according to Claim 27, further comprises the step of depositing a sacrificial material layer onto the substrate prior to step (a) and removing the sacrificial material layer in order to remove the implantable endoluminal device from the substrate in step (c).

Claim 29. (previously presented) The method according to Claim 27, wherein step (a) is conducted by ion beam-assisted evaporative deposition.

Claim 30. (previously presented) The method according to Claim 27, wherein step (a) is conducted by sputtering.

Claim 31. (previously presented) The method according to Claim 29, wherein the ion beam-assisted evaporative deposition is conducted in the presence of an inert gas.

Claim 32. (previously presented) The method according to Claim 31, wherein the inert gas is selected from the group consisting of argon, xenon, nitrogen and neon.



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Claim 33. (previously presented) The method according to Claim 27, wherein the deposition rate is at least about 20 nm/sec.

Claim 34. (previously presented) The method according to Claim 27, wherein the deposition rate is between about 10-100 microns/hour.

Claim 35. (currently amended) The method according to Claim 27, wherein during the deposition of the device-forming metal, ~~the~~ a deposition chamber pressure is less than about $2 \times 10^{-7}$ torr.

Claim 36. (previously presented) The method according to Claim 27, wherein during the deposition of the device-forming metal, the substrate is rotated.

Claim 37. (currently amended) The method according to Claim 27, wherein during the deposition of the device-forming metal, ~~the~~ a substrate temperature is between about 300 and 1100 °C.

Claim 38. (currently amended) A method of making an implantable medical device comprising the steps of:

a. providing a substrate having a shaped exterior surface capable of accommodating metal deposition thereupon;
b. vacuum depositing a biocompatible material onto the shaped exterior surface of the substrate at a deposition rate, with a substrate temperature, and at a deposition chamber pressure that controls a formation of heterogeneities on a surface of a biocompatible material layer; and
c. forming the implantable medical device from the deposited biocompatible material, wherein the deposition rate is at least about 20 nm/sec, the deposition chamber pressure is less than about $2 \times 10^{-7}$ torr, and the substrate temperature is between about 300 and 1100 °C.

Claim 39. (canceled).

Claim 40. (currently amended) A method of making an implantable medical device comprising the steps of:



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a. providing a substrate having a shaped exterior surface capable of accommodating metal deposition thereupon;

b. vacuum depositing a biocompatible material onto the shaped exterior surface of the substrate at a deposition rate, with a substrate temperature, and at a deposition chamber pressure that controls a formation of heterogeneities on a surface of a biocompatible material layer; and

c. forming the implantable medical device from the deposited biocompatible material,

~~The method according to Claim 38,~~ wherein the deposition rate is between about 10-100 microns/hour, the deposition chamber pressure is less than about $2 \times 10^{-7}$ torr, and the substrate temperature is between about 300 and 1100 °C.

Claims **41 - 50**. (canceled).

Claim **51**. (previously presented) The method according to Claim **40**, wherein control of heterogeneities further comprises controlling at least one of grain size, grain phase, grain material composition, material composition and surface topography during vacuum deposition.



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